The Office Actions recognize that Dong does not disclose the requirement of claims 1 through 3 that the deviation of UV photosensitivity over the core region and the inner cladding region is ±10% or less, nor the requirement of claim 4 that the deviation of UV photosensitivity over the core region and the inner cladding region of ±5% or less. The position has been taken that it would have been obvious to provide these specific claim requirements in the Dong fiber as such provision would only involve routine skill to discover an optimum value of result effective variables.

Arguments in traverse of the rejection included the following points. Dong neither mentions nor recognizes controlling the distribution of UV photosensitivity in the inner cladding region, let alone control of the distribution of UV photosensitivity in both the core region and the cladding region such that the difference between an average value of UV photosensitivity in the core region and an average value of UV sensitivity in the inner cladding region is 10% or less. In fact, Dong teaches that the photosensitive region of the inner cladding preferably has a higher photosensitivity than that of the core region because a larger photosensitive cladding would enhance the suppression of coupling into cladding modes or radiation modes. Dong thus teaches away from the claimed invention. Reference is made to the Amendment for a full presentation of the traverse.

In response to these arguments, the Office Action now asserts that Dong explicitly teaches the claim limitations at issue at column 7, lines 12-32. It is also asserted in the Office Action that the Dong preference for a higher UV photosensitivity in the inner cladding than in the core region is not persuasive because the claims only recite that the deviation or difference between photosensivities in the two regions are to be minimized to ±10% or less. Reconsideration of these assertions is strongly urged.

Column 7, lines 12-32 of Dong is reproduced as follows:

> An example of an optical fibre with a photosensitive core and a small photosensitive primary cladding has been used to demonstrate the principles of the present embodiments, because, once the underlying principles of the invention have been identified, such photosensitive optical fibre is relatively easy to manufacture and it is relatively easy to introduce a uniform exposure to the writing beam across the thin photosensitive region, although an optical fibre with *a photosensitive core and a larger photosensitive cladding would enhance the suppression of coupling into cladding modes or radiation modes.*
>
> FIG. 1a gives the refractive index profile of the proposed optical fibre *for the suppression of the coupling* from the guided modes into the cladding modes. This structure allows strongly confined modal power in the core, which makes it possible to achieve cladding mode suppression, especially *when in combination of only a small part of the primary cladding adjacent to the core.* The performance of a larger than 60 dB (decibel) peak transmission grating in this fibre is shown in FIG. 3b, where the cladding modes is suppressed to be *less than 0.5 dB* (emphasis added).

Contrary to the assertion in the Office Action, the above quoted portion of Dong does not explicitly teach photosensitivity deviations of ±10% or less or ±5% or less, nor does it explicitly teach a cladding mode coupling loss of 0.1 dB.

Dong's objectives are to make a small part of the primary cladding adjacent to the core photosensitive, and to strongly confine modal power in the core. These features make it possible to achieve cladding mode suppression of less than 0.5dB. The distribution of the UV photosensitivity in the inner cladding region is not mentioned in Dong. In fact, photosensitive cladding of Dong's fiber is so thin that a person of ordinary skill would have had no motivation to control the distribution of the photosensitivity in the cladding.

In direct contrast, in the claimed fiber the distribution of the UV photosensitivity in the inner cladding region is controlled for a deviation of ±10% or less. This configuration makes it possible to reduce the cladding mode coupling loss to be about 0.1 dB even if the diameter of the inner cladding is much larger, for example by three times, than that of the core, and modal power

is not confined in the core as strongly as required by Dong. The 0.1dB cladding mode coupling loss is considerably low by comparison with the 0.5 dB loss of Dong. Realization of such a degree of loss is a drastic improvement as a practical matter.

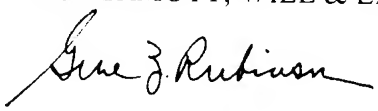
The statement in the Office Action that discovering an optimum value of result effective variable involves only routine skill in the art is a generalization that is not applicable to the present set of circumstances. A vast number of Federal Circuit decisions have been rendered, some identified in the previous Amendment, that hold that obviousness cannot be based solely on the possibility that a variable can be changed to obtain an improved result. To sustain a holding of obviousness, the prior art must have led the artisan to make such modification. Dong explicitly teaches that the photosensitive region of the primary cladding preferably has a higher sensitivity than that of the core. Such a teaching would have led away from the smaller deviation of photosensitivity required for the claimed fiber. The claims do not recite which sensitivity (core or cladding) is larger because, while a little deviation is within acceptability, uniform distribution of photosensitivity is the ideal of the present disclosure. This concept is in stark contrast to Dong's objective of a larger cladding photosensitivity.

It is submitted, therefore, that claims 1 through 5 are patentably distinguishable from Dong. Allowance of the application is respectfully solicited. To the extent necessary, a petition

for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

MCDERMOTT, WILL & EMERY



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